A Note on the Reptiles occurring on the Cocos-Keeling Islands

By C. A. GIBSON-HILL, M.A.

Intensive collecting over a period of eight months yielded examples of seven species of reptiles, five of which were briefly recorded by Wood-Jones (1912: 346–7). The total is made up of two turtles, one snake of the family Typhlopidae, one sea snake and three lizards (all geckos). Only two of the terrestrial reptiles and one of the Chelonia are known with certainty to occur on Christmas Island.[1]

There is an interesting absentee, the Christmas Island gecko, *Gecko listeri* Blgr., which, according to the locality labels on two specimens in the Raffles Museum, was taken on the Cocos-Keeling Islands in 1923. The Dayaks who collected the specimens were only on Cocos for two days, and unfortunately they also worked on Christmas Island on the same expedition. It therefore seems probable, since their record remains unsubstantiated, that the specimens were incorrectly labelled, and accordingly Cocos should not be included in the acknowledged range of *Gecko listeri* until further examples are taken there.

The geckos included in this collection were all found on the main atoll. There is said to be at least one species occurring on North Keeling, but I was unable to obtain any specimens. This island was not visited by the collectors from the Raffles Museum in 1923, and Wood-Jones makes no reference to the presence of lizards there.

CHELONIA.

Chelonia mydas (Linn.).

Testudo mydas Linné, Syst. Nat. ed. 10, 1758, p. 197: Ascension Island.

Local Malay name, *Pēnyu (Bētul)*.

Formerly this turtle was plentiful in the main lagoon, but now the Malays, who catch it for food, only manage to find

1. Andrews (Monograph of Christmas Island, 1900: 54), referring to Christmas Island, says "turtles _____ occasionally come up on to the white beaches to deposit their eggs in the coral sand _____. There are probably three species—*Thalassochelys caretta*, *Chelone imbricata* and *C. mydas* _____ a small specimen of the latter was speared in shallow water near North-East Point". Unfortunately neither Andrews nor any other collector has ever recorded an example of the first two species being taken on Christmas Island and during two years there I only found eggs and young, and saw two shells, of *Chelonia mydas*. There was not even any tradition among the Malays of other species being taken off the island. It is therefore probable that *Eretmochelys imbricata* is not found on Christmas Island though it occurs on the Cocos-Keeling Islands.

about 20–25 a year. It occasionally breeds on Pulo Panjang and Pulo Luar. Many of the young turtles are killed by shore crabs on their way to the sea, or by Moray eels or sand sharks after they have reached it. The worst offender among the crabs is *Ocypoda ceratopthalma* (Pallas). These kill the turtles very quickly and neatly, crushing the brain in the region of the temporal lobe by driving one spike of the chela through the posterior wall uf the orbit, and then closing the claw smartly. They usually eat the head first.

When the Malays catch very young turtles, they keep them alive in wooden trays containing about four inches of water. They feed them on small Coenobites, mostly *Coenobita rugosus* M-Edw. When between three and four months old they are about six to seven inches long. When just short of a year they are said tu be some ten inches long, and at this stage they begin to prefer a diet of green weed. They are then liberated in a large tidal pond. The flesh is not considered palatable until the turtle is at least fifteen inches long. The majority of the larger specimens which are now speared in the lagoon only measure 15–18 inches across the shell, but there are several old shells preserved in huuses in the kampong with a breadth of 26 inches or more.

This turtle still breeds in considerable numbers on North Keeling.

Eretmochelys imbricata (Linn.).

Testudo imbricata Linné, Syst. Nat. ed. 12, 1766, p. 350.

Local Malay name, *Pēnyu Sisek.*.

This species is much less plentiful than the preceding, and only one, or occasionally two, specimens are caught in a year. It is thought to have ceased to breed in the main lagoon, but nests are sometimes found on North Keeling. Most of the specimens now taken only measure 12–15 inches across the shell, although it is said formerly to have reached as large a size as *Chelonia mydas*. The shell is used for making broaches, ornaments and buckles. The flesh is eaten, thuugh it is uf poor quality and has a strung unpleasant smell.

LACERTILIA.

Lepidodactylus lugubris (Dum. & Bibr.).

Platydactylus lugubris Dum. and Bibr., Erp. Gen. 3, 1836, p. 304: Tahiti.

Local Malay name, *Cheehak Kuning*.

This gecko is plentiful on all the principal islands in the main atoll, except Pulo Luar. It is particularly numerous on Pulo Selma. It is usually found under the bark of the coconut

palms, but it also occurs in the houses. It lays 4–6 eggs, white, thin-shelled, slightly translucent and measuring 9·5–10·5 x 7·25–7·75 mm. These are generally placed under the loose bark of a coconut palm, but in the houses they may be laid in any small nook or cranny. They are nearly always ejected in pairs, and, as the shell is soft when they are first laid, the two eggs usually remain adherent to each other. They are also slightly distorted by any hard substance on which they are deposited, and a perfectly symmetrical egg is rare. They hatch sometime after the forty-second day; a newly emerged gecko is between 32 and 35 mm. long.

An adult specimen is off-white on the belly, with the ventral surface of the tail occasionally rising to a very light ochre. The dorsal surface is variable in colour, though the pattern remains fairly constant, and can be lightened or darkened slowly to suit the gecko's surroundings. In specimens found among the coconut palms it is generally a finely mottled mid or sandy brown: sometimes it is slightly more greyish in tone and sometimes slightly golden; frequently the colour is lighter and richer on the tail. The chin is finely speckled with white, and there is a paler, wavy line through the eye, with a darker line immediately below it. There is a series of irregular, transverse, paler lines across the back and the dorsal surface of the tail, the bands being more conspicuous on the latter, and a pair of black, or at least much darker, spots immediately anterior to the line at the base of the tail. There is also a series of broken lines along the flanks and a small area of similar lines above the base of the limbs. The colour of these lines varies. In some specimens they are very faint, and in others they are much darker than the surrounding skin and very conspicuous. In young specimens they are always dark and frequently run into each other, so that the whole flank is much deeper in tone than the back and tail. Examples taken in houses are usually paler, slightly duller and greyer than those found in the coconut plantations. The iris is always a speckled, grizzled grey with two thin, horizontal darker lines across it.

Gehyra mutilata (Wiegm.).

Hemidactylus (*Peropus*) *mutilatus* Wiegmann, Nova Acta Acad. Leop-Carol. 17, 1835, p. 238: Manila.

Local Malay name, *Chechak Kĕlabu.*

This gecko is plentiful on all the principal islands in the main atoll, including Pulo Luar where it is particularly numerous. Wood-Jones found it much less common than the preceding species but, except on Pulo Selma, it is now probably slightly

the more abundant of the two. It is usually found under the bark of the coconut palms, but it is no longer confined to this habitat and it occurs frequently in the houses on both Pulo Tikus and Pulo Selma. It generally lays 3–4 eggs, measuring 11–12 x 9 mm. They are white, thin-shelled and slightly translucent, appearing faintly pinkish when fresh and slightly bluish when older. They are usually placed under the bark of a coconut palm. They appear to be firmer than those of *Lepidodactylus lugubris* when first laid, and they are much less frequently distorted in shape or adherent to each other in pairs. They hatch between the sixtieth and the sixty-fourth day. A typical newly emerged gecko measured:— total length, 47; tail, 22; length of head, 6; breadth of head, 5·5; forelimb, 7·5; hindlimb, 9 mm.

The young geckos are fairly uniform in colour. The ventral surface is light grey: the dorsal is a mid, faintly greyish, umber with a series of paired, slightly darker, transverse bars along the back, the whole being irregularly speckled with fine cream spots, thinly outlined in dark grey. Towards the end of the tail, pairs of these spots run together to form incomplete rings. In slightly larger specimens the ground colour of the dorsal surface and flank may be slate grey or greyish umber, and the spots are usually a dirty white rather than cream. The exact colouration of these areas is variable, though the pattern remains fairly constant, and they can be lightened or darkened slowly to conform to the gecko's surroundings.

Typically the adult of this species is a dirty white, or a light dirty grey, on the ventral surface, and dark grey, with sometimes a hint of umber in it, on the dorsal surface, the latter being speckled with off-black spots the size of a pin's head. In about half the individuals there are also dirty white, or light grey, spots over the head, fading away down the neck and on the shoulders, and a pale streak through the eye with a darker line below it. In a few examples the dorsal surface is a uniform dark slate-grey. In one specimen which I examined it was mid grey, finely peppered with dark grey and with a number of pin-head pale grey spots. When kept in a white box, or similar very light surroundings, this species, like other geckos, slowly becomes much paler in colour; and the individuals living on the ceilings of the houses are all a light, slightly cadaverous, grey. The iris is always a light speckled grey, with two wavy, dark grey vertical lines.

Mr. M. W. F. Tweedie has kindly supplied the following note on the Cocos-Keeling specimens of *G. mutilata*.

Comparison of the series from the Cocos-Keeling Islands preserved in the Raffles Museum (35 specimens) showed that

the inner postmentals differ consistently in shape from those of Malayan specimens, being longer and less narrowed posteriorily (Fig. 1 a. b).

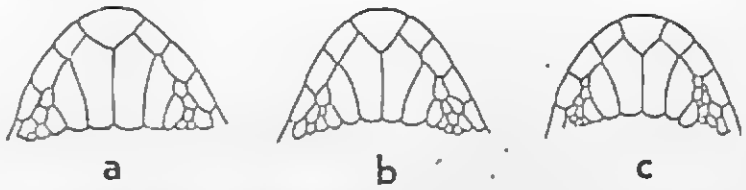

Fig. 1. Chin shields of *Gehyra mutilata* from (*a*) the Cocos-Keeling Islands, (*b*) Singapore and (*c*) Buitenzorg, Java, to show the distinctive shape of the inner postmentals in the Cocos-Keeling form.

Assuming, as seems likely, that *G. mutilata* has been artificially introduced to the islands, two sources for this population may be postulated, Malaya and Java. Two specimens taken at Buitenzorg, Java, were kindly sent on loan by Dr. A. C. V. van Bemmel and were examined with a view to deciding whether the peculiarity of the Cocos geckos is indicative of their origin. This proved not to be the case, the Java specimens resembling more closely the Malayan (Fig. 1 c).

The difference is admittedly slight and would only be noticeable in series, but it seems to indicate a perceptible degree of differentiation in the Cocos population which, if the species was artificially introduced, must have taken place in at most 115 years.

Hemidactylus frenatus Dum. & Bibr.

Hemidactylus frenatus Dum. and Bibr., Erp Gén., 3, 1836, p. 366.

No local Malay name.

This species, not previously recorded from the Cocos-Keeling Islands, is represented in this collection by a single example taken under the bark of a coconut palm on Pulo Selma. The belly is a very light fawnish brown, and the dorsal surface a pale fawn-brown with a series of faint, thin, dark charcoal-grey lines arranged regularly over the head, back and limbs. The iris is grey-brown with thin, vertical, off-black lines. *H. frenatus* seems to have reached Christmas Island about 1900, shortly after Andrews's first visit. In 1939–40 it was very plentiful in houses on both sides of the island, and had spread into the jungle over most of the north coast, the eastern portion of the plateau and the slope, dropping down to Smithson Bight. Presumably it is a fairly recent arrival on the Cocos-Keeling Islands.

OPHIDIA.

Typhlops braminus (Daud.).

Eryx braminus Daudin, Hist. Rept., 7, 1803, p. 279.

Local Malay name, *Chaching Minyak*.

This little snake is by no means plentiful and, owing to its retiring habits, is rarely seen. Among the larger islands it appears to occur only on Pulo Selma and Pulo Panjang, where there is a sufficient depth of soil. It is absent from Pulo Atas, which is very sandy, and from Pulo Tikus, whose surface is composed almost entirely of coral fragments with very little earth. It is possible that it is present on Pulo Luar, but I failed to find any specimens. It spends the greater part of its time hiding in the soil under large coral boulders, only emerging in damp, overcast weather. It is very active when disturbed and swims well in fresh water. In colour it is a very dark grey, almost black, on the dorsal surface, and very slightly paler on the ventral.

The only snake at present recorded from Christmas Island is *T. exocoeti* Blgr., but Mr. M. W. F. Tweedie who has recently examined two specimens which I took there in 1940 and assumed to be immature *exocoeti* informs me that they are actually *T. braminus*. This latter, widespread species is, therefore, now known to have reached both Christmas and the Cocos-Keeling Islands.

Pelamis platurus (Linn.).

Anguis platura Linné, Syst. Nat. ed. 12. 1766, p. 391.

A single specimen was found in an exhausted condition in a small pool on the north-east shore of Pulo Tikus, following several days of strong easterly winds. Total length, 711 mm. In colour it was steel-black along the dorsal surface of the head and body, and yellow along the ventral: the tail was light yellow, with a dorsal and ventral row of black spots. The Malays described it as *Ular*, but they were very definite that they had not seen a specimen before, and it would seem not to be resident on the atoll.